

RCRA Organic Air Emission Standards Overview

A brief summary of Subparts AA, BB and CC Standards for RCRA permitted, interim status, and generator facilities.

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RCRA Air Standards Applicability: Who is Covered?

- Facilities subject to *40 CFR* §270:
 - *Permitted*
 - *Interim status*,
- Hazardous waste recycling units located at 90-day facilities, provided another unit at the facility has to obtain a RCRA permit (previously exempt),
- Large Quantity Generator (LQG) 90-day tanks and containers.

[*40 CFR* §264.1030(b)(1-3)]

RCRA Organic Air Emissions Standards: What is subject to the Standards?

Hazardous Waste Management Units (HWMUs) and associated equipment that is managing organic hazardous waste streams:

- Subpart AA: *Process vents,*
- Subpart BB: *Equipment,*
- Subpart CC: *Tanks, Surface Impoundments, Containers & Miscellaneous Units.*

Why the Standards were/are Needed “Complacency will never do.”

The Standards were designed to address 4 Major Emission Issues resulting from complacent facility inspection and maintenance practices:

- Odor,
- Ozone precursors,
- Air toxic pollutants which include many carcinogens found to impact populated areas of the Country,
- Over all RCRA compliance.



Steve Irwin

'The Crocodile Hunter'

11/9/2010

The Standards were development under RCRA Section 3004(n)

- Phase I (Subparts AA and BB)
 - *Process Vents and Equipment Leaks (55 FR 25494, June 21, 1990).*
- Phase II (Subpart CC)
 - *Tanks, surface impoundments, containers, miscellaneous units (59 FR 62927, December 6, 1994).*

The Standards are effective for all existing, interim status and permitted hazardous waste handling facilities in all states.

All hazardous waste handling facilities should be able to demonstrate compliance.

States with RCRA Organic Air Emission Standards Authorization

- Most states are authorized for the Organic Air Emission Standards and are responsible for applying the Standards and inspecting for Standard compliance.
- If the state has not yet adopted and been authorized, the EPA is responsible for applying the Standards and inspecting for Standard compliance.
 - *Including the issuance of a federal portion of the RCRA Hazardous Waste Management Permit concurrently/jointly with the state to constitute a full RCRA Permit for the facility.*

The Standards' Regulated Universe: Facts to Keep in Mind

- Almost every facility that handles organic waste streams is subject to the Standards.
 - *Most commonly Subpart BB and Subpart CC.*
- Exemptions from the Standards, though commonly claimed, are normally not applicable at most of the facilities.
- Key point, the Standards require unit-, equipment- and device-specific emission controls.

RCRA Organic Air Emissions Standards: What is the Control Approach?

- Applicability is based on organic content of the hazardous waste streams handled and the existence of operating physical, unit-, equipment- and device-specific emission controls.
- Units that manage waste below threshold levels of organic concentration are exempt from control requirements:
 - Subpart AA – 10 ppmw total organic concentration of waste stream.
 - Subpart BB – equipment contacting waste with total organic concentrations of 10% by weight.
 - Subpart CC – 500 ppmw average volatile organic concentrations at point of origination.

RCRA Organic Air Emission Standards: How is Compliance Demonstrated?

- The Standards intend the facility demonstrate compliance through recordkeeping and permit application documentation.
 - Control choices need to be well documented and the *Leak Detection and Repair and inspection records well detailed to clearly show compliance of each subject HWMU or component*.
 - Employee training should be well documented to show employee expertise in leak detection methods, corrective action, and repair record keeping for Standard compliance.
 - Can be done combined with tank/HWMU inspection and recordkeeping.

Now moving along to individual Standards....

Subpart AA: Process Vents

What vents are subject to comply?

- Applicable to certain TSD and LQG process vents associated with:
 - Distillation
 - Fractionation
 - Thin-film evaporation
 - Solvent extraction
 - Or air or steam stripping operations
- Units that manage hazardous wastes with **(total) organic concentrations** of at least 10 parts per million by weight (ppmw).

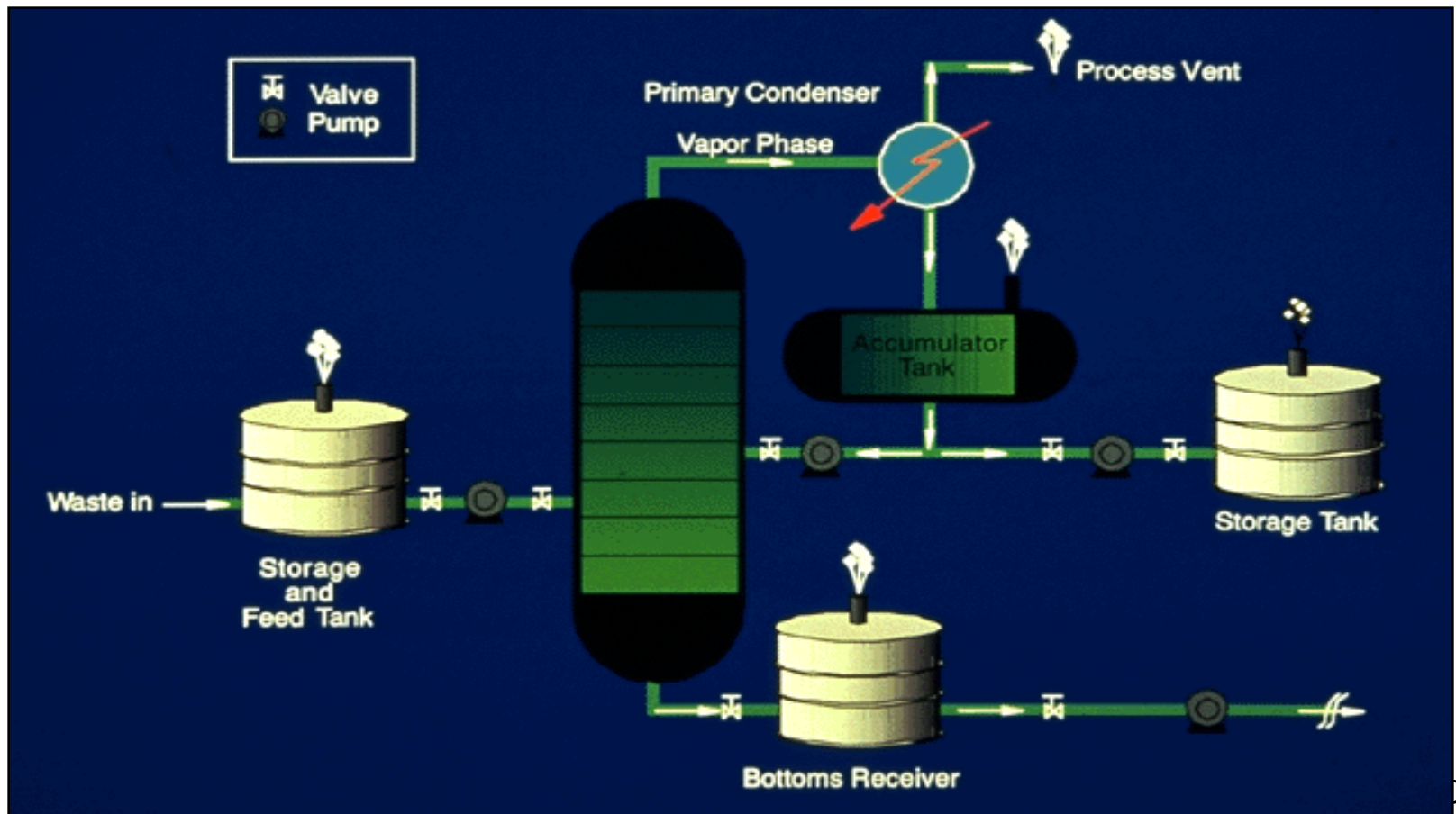
Subpart AA: Process Vent Definition

Process vent:

Any open-ended pipe or stack that is vented to the atmosphere either directly, through a vacuum-producing system, or a tank associated with hazardous waste distillation, thin-film evaporation, solvent extraction or air or steam stripping.



Process Vent: Applicability



Subpart AA: Emissions Control Requirements

- Reduce total organic emissions from **ALL** process vents from subject RCRA units facility wide, to <3 lb/h and 3.1 tons/yr OR
- Use unit-specific control devices on all subject RCRA units to reduce the total organic emissions from the source by 95 percent by weight.
- If the facility chooses to use a control device, Subpart AA specifies closed-vent system and control device performance, monitoring and repair requirements.
- If a closed-vent system to a control device is used, the closed-vent system and control device must be operating at all times when emissions may be vented.



Subpart AA: Inspection & Monitoring

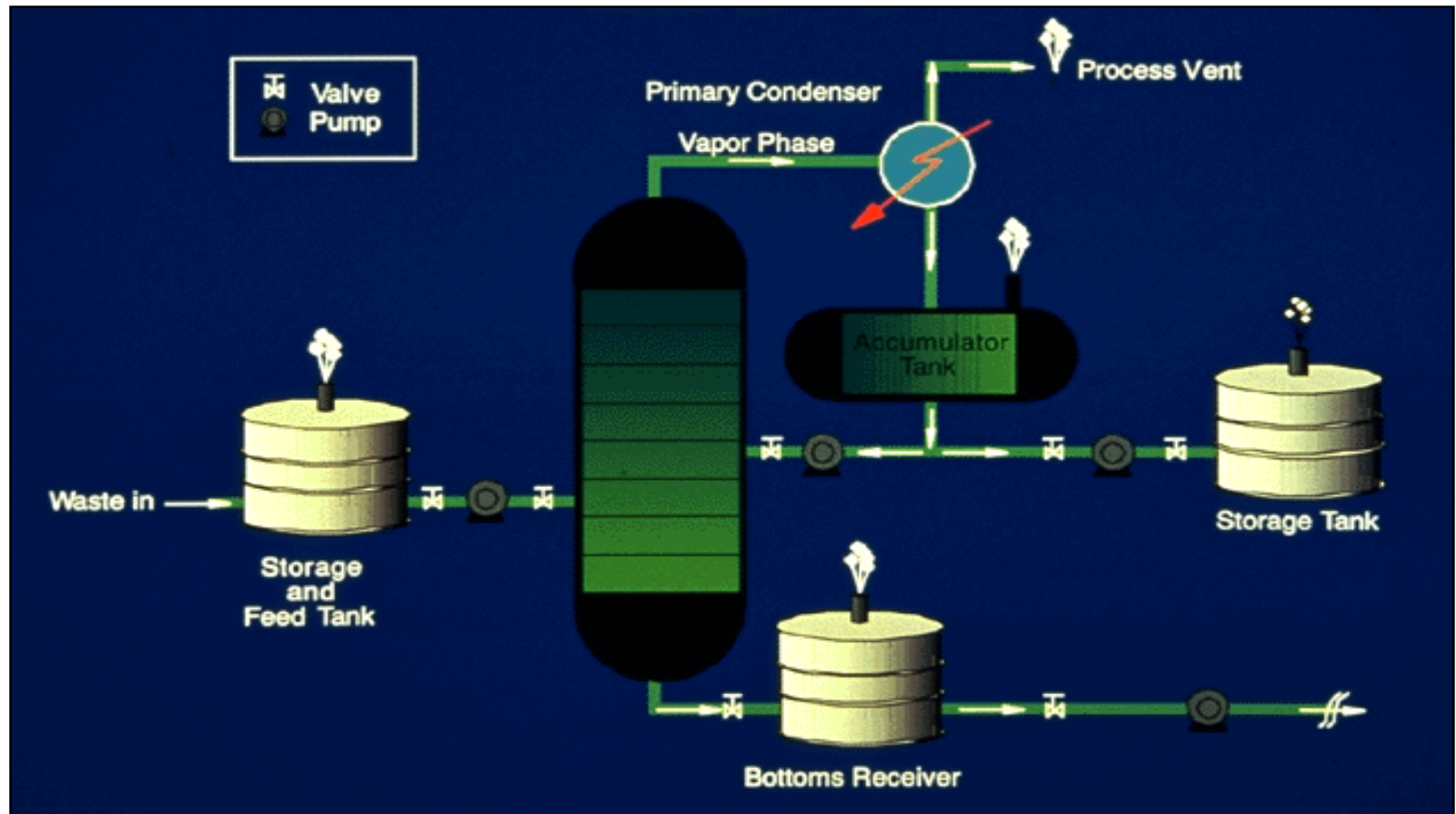
- Each control device must have an installed and operating flow indicator that records at least once per hour.
- Each control device must have an installed and operating monitoring device to continuously monitor the control device's operation per the Standard.
- Must inspect the measurements of the required monitor at least once each operating day.
- If control device inspection indicates a problem, corrective action must be immediately implemented and recorded.
- Closed vent systems must be monitored annually; detectable emissions controlled as soon as practicable, but not later than 15 days.

Subpart AA: Recordkeeping & Reporting

- Record:
 - *Design documentation, repairs, training, monitoring and inspection information.*
- Report:
 - *Must report to agency instances where control device exceeded design specifications for longer than 24 hours.*

Next a brief summary of equipment requirements...

Subpart BB: Equipment Standards



Subpart BB:

What equipment is subject?

- Equipment that contacts hazardous waste streams containing at least **10% total organic concentrations by weight.**
- Specific Requirements are detailed for:
 - Pumps
 - Compressors
 - Pressure relief devices
 - Sampling connecting systems
 - Open-ended valves or lines
 - Valves
 - Flanges and other connectors



BB Inspections

An Example of a common AA and BB subject Unit.

Where do you start?



Subpart BB: Specific for Each Piece of Equipment

In general, the Standard includes for each type of Equipment:

- Monitoring method and frequency,
- Leak and release definition,
- Required physical control for some pieces,
- Operational controls,
- Some measurement device requirements,
- Repair procedures, reporting and recordkeeping,
- Equipment & Leak tagging.



Equipment Tagging Approaches



Equipment Tagging Approaches & Color-Coding

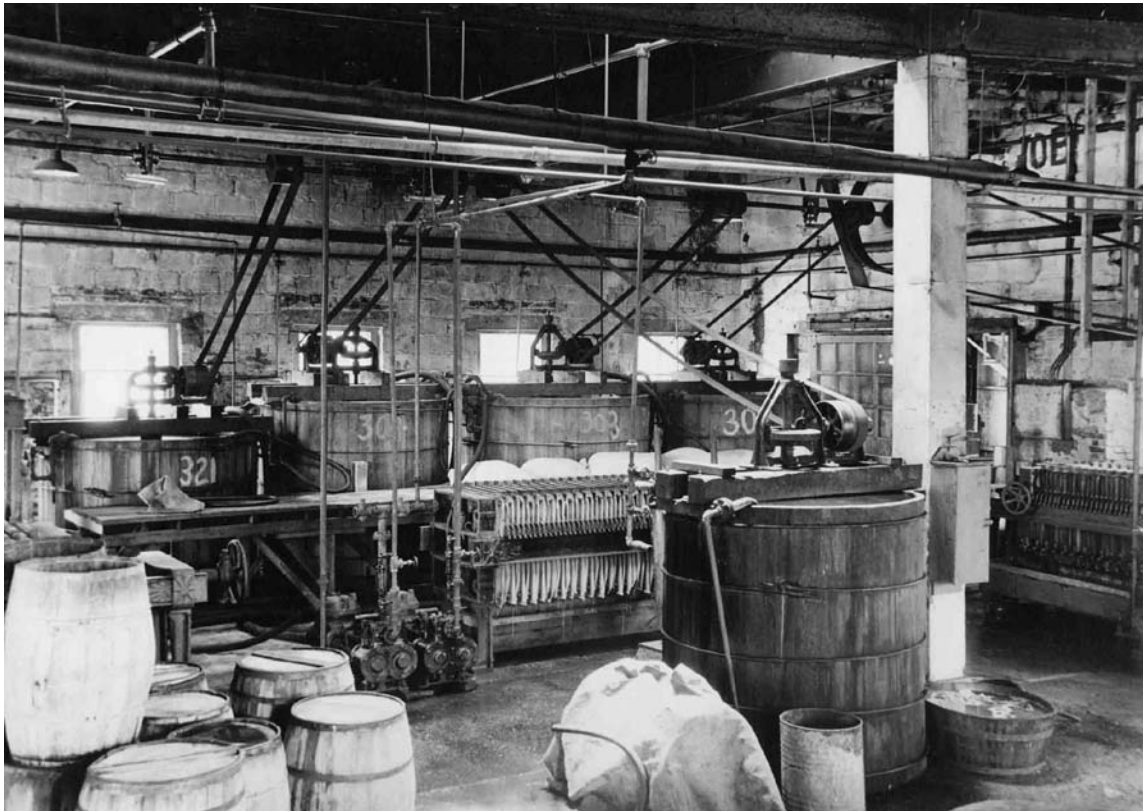


Subpart BB:

Recordkeeping Requirements

- ***Equipment identification numbers,***
- Associated HWMU identification,
- Location of equipment on the HWMU,
- Type of equipment,
- Waste state and percent-by-weight total organics in waste stream contacting the piece of equipment,
- Control method used to comply with Standard,
- Can be recorded with other similar records for CAA compliance and with RCRA tank, HWMU or container inspection records.

RCRA Subpart CC - Applicability



Circa 1935
Chemical Plant
in NJ

11/9/2010

Subpart CC Exclusions

- Wastewater treatment units
- Elementary neutralization units
- Emergency or spill management units
- Totally enclosed treatment facilities
- Hazardous waste recycling units (if no other permitted units at facility)
- Conditionally exempt small quantity generators
- Small quantity generators
- Satellite accumulation units
- Other permitting exemptions
- RCRA empty containers

Units with CAA, NESHAP or NSPS Control

- Subpart CC excludes units which are equipped and operating with air emission control devices required by CAA 40 CFR Part 60, 61 or 63
 - Clean Air Act (CAA)
 - National Emission Standard for Hazardous Air Pollutants (NESHAP)
 - New Source Performance Standard (NSPS)

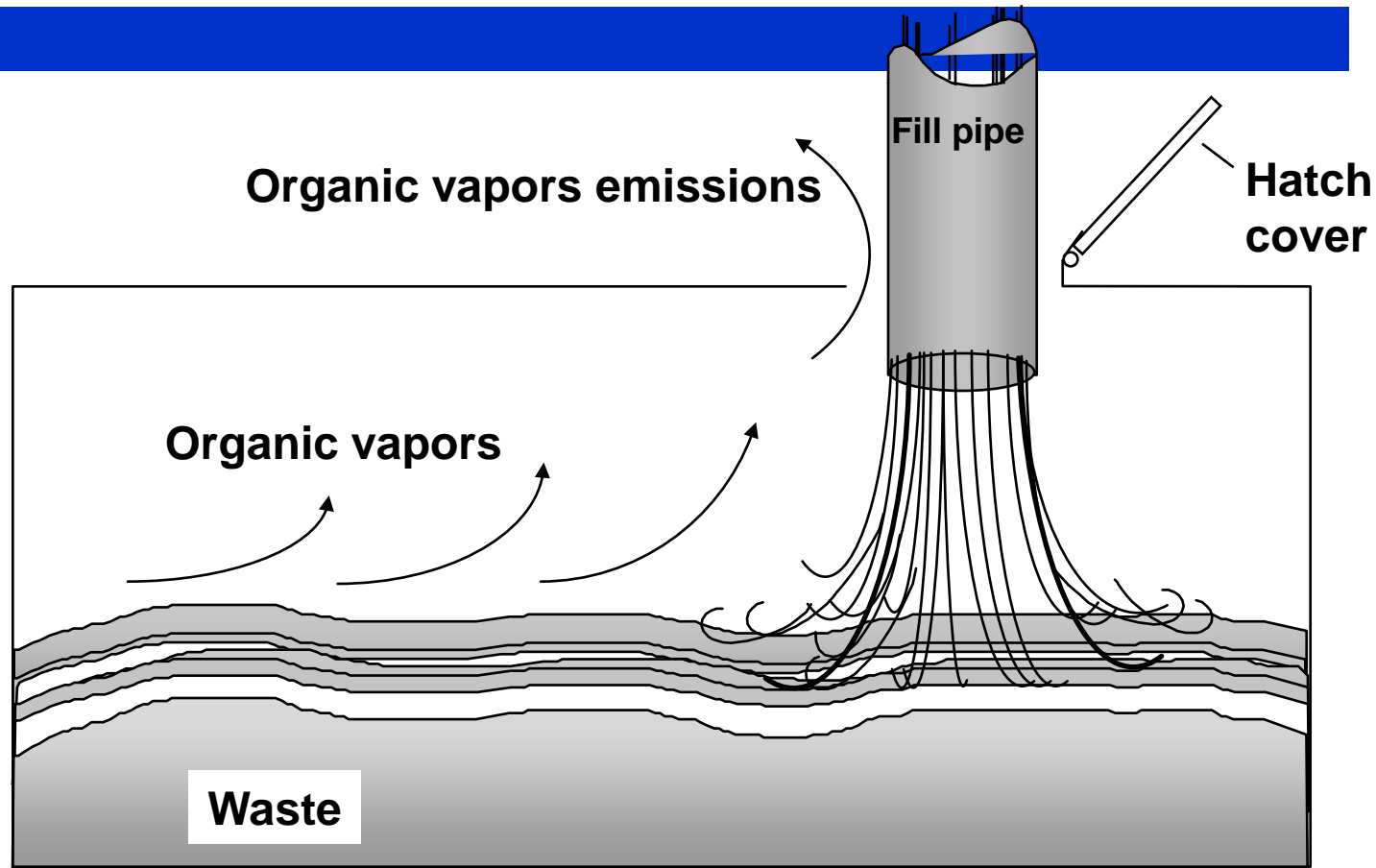
Subpart CC: Container Control Requirements



DOT Container Use and Compliance with Subpart CC Container Standards

- In DOT Hazardous Materials (HzMat) regulations, waste makeup or constituents all have specified DOT containers in which the waste is allowed to be stored and transported.
- Each approved container for a specific waste has been tested in a multi-test procedure by DOT.
- Approved containers for specific waste constituents can be found tabulated in 49 CFR §172
- The DOT code for the container is embossed in the container's construction.

Splash Loading: Not Allowed for Level 2 Containers



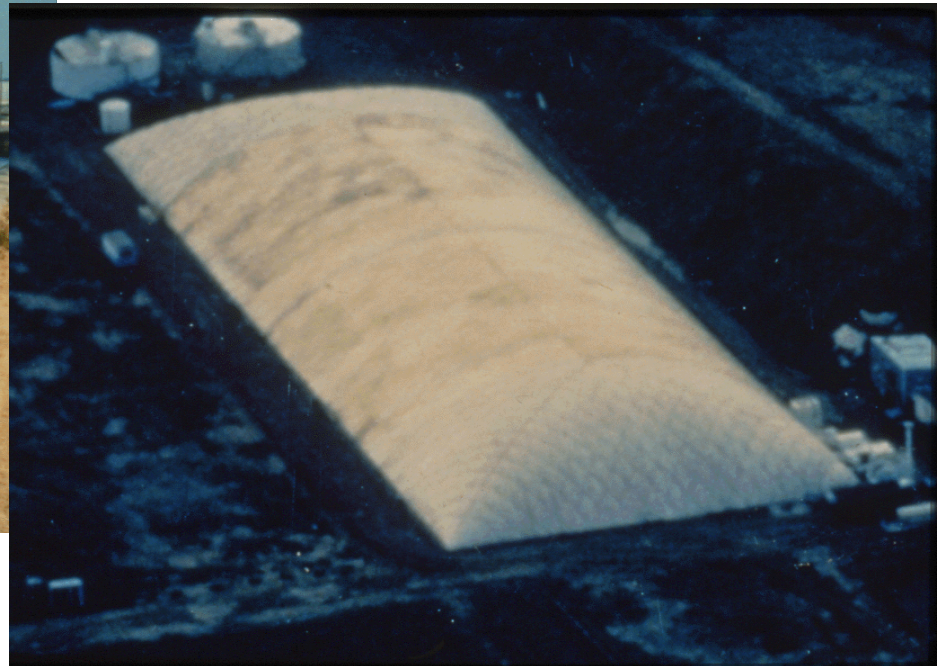
Container Level 3 Enclosures

- Enclosures must meet the design and operating criteria specified in “Procedure T Criteria for and Verification of a Permanent or Temporary Total Enclosure” under 40 CFR 52.741.

Subpart CC: Control Requirements for Tanks



Control Requirements for Surface Impoundments



In Closing: RCRA Organic Air Emission Standards Help On-line

- Comprehensive Standards On-line Training.
 - Available on the EPA Environmental Response Training Programs Virtual University (ERTPVU) and NETI OnLine. Includes:
 - RCRA Organic Air Emission Standards Handy Flipbook
 - Also being added to NETI OnLine.
- Introductory Webinar (2010) on NETI OnLine.